

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated February 9, 2005 (U.S. Patent Office Paper No. 20050203). In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1, 4 and 11 are being canceled without prejudice or disclaimer, while claims 2, 3, 5, 6, 9 - 10 and 12 - 13 are being amended to correct formal errors, and to more particularly point out and distinctly claim the subject invention. In addition, new claim 21 is hereby submitted for consideration. Applicant hereby submits that no new matter is being introduced into the application through the submission of this response.

Formal Objections or Rejections

The drawings were objected to for failing to show every feature of the invention as claimed. Specifically, the Examiner appears to object to the recitation of claim 11 as not being shown in the drawings. As noted above, claim 11 is being canceled, thereby rendering this objection moot.

Claims 1 - 12 was rejected under 35 U.S.C. §112, second paragraph, for being indefinite. In particular, language in the claims was cited as being unclear. As outlined above, claim 4 is being canceled while the remaining claims are being amended to more particularly point out and distinctly claim the subject invention. Consequently, Applicants will submit that this rejection has been overcome and thus respectfully request its withdrawal.

Allowable Subject Matter

Claims 14 - 16 and 18 - 20 were allowed by the Examiner, while claims 2, 3 and 5 - 11 would be allowed if amended into independent form. As outlined above, claim 1 has been canceled, while claims 2 and 3 have been amended into independent form and claims 5 - 10 have been amended to depend from claim 2, all in accordance with the Examiner's

requirements. Applicants will submit that all the above-discussed claims are now in condition for allowance.

Prior Art Rejections

The Examiner rejected claims 1, 4, 13 and 17 under 35 U.S.C. §102(b) on the grounds of being anticipated by US Patent No. 5,834,987 to Dent. Applicants have carefully considered this rejection, and hereby respectfully traverse.

The present invention as now recited in claim 13 is directed to a method for providing a variable loop bandwidth phase locked loop, wherein the method comprises transforming in a first modulator that has a sigma delta circuit a baseband signal into an integer signal for specifying a division number; sending the integer signal to a control terminal of a programmable divider; shaping in a second modulator an incoming baseband signal into a prescribed signal waveform and that sends it to a voltage controlled oscillator; sending an oscillation signal from the voltage controlled oscillator to the programmable divider; providing a variable current charge pump which changes the loop bandwidth of the phase locked loop according to a control signal from a control circuit; providing a phase-frequency detector for receiving a reference signal from a controller and the oscillator signal from the programmable divider; inputting at an input a succession of "1" signals, wherein no modulated signal degradation occurs, and wherein even at a high symbol rate, the reference signal frequency remains low and sampling frequencies of the phase-frequency detector and the sigma delta circuit remain low; and adjusting a phase error between the first modulator and the second modulator.

In contrast, the reference of Dent '987 discloses a frequency synthesizer system and method for three-pot modulation where a modulation signal is inputted into a sigma-delta modulator and a control signal is outputted from the sigma-delta modulator to change a divisional ratio of a divider. As such, Dent '987 does not disclose or suggest any device or step for adjusting a phase error between the first modulator and the second modulator, as recited in at least claim 13, wherein in the preferred embodiment of the present invention, the first modulator is implemented as a sigma-delta modulator and the second modulator is a pulse shaping circuit. Dent '987 cannot anticipate or render obvious every feature of the invention as recited in claim 13.

Further, since claims 1 and 4 are being canceled, the rejection as to these claims is rendered moot.

Conclusion

In view of all the above, Applicant respectfully submits that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejection in the Office Action relies. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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